

PATENT SPECIFICATION

(11) 1 279 581

DRAWINGS ATTACHED

- (21) Application No. 2184/71 (22) Filed 15 Jan. 1971
 (31) Convention Application No. 7 009 730 (32) Filed 18 March 1970
 (31) Convention Application No. 7 039 693 (32) Filed 4 Nov. 1970 in
 (33) France (FR)
 (45) Complete Specification published 28 June 1972
 (51) International Classification B65G 11/16 // B64F 1/30
 (52) Index at acceptance
 B8S 10U
 B7J 118



(54) STRUCTURE FOR SLIDING PURPOSES

(71) We, LE JOINT FRANCAIS, a French Corporation of 10, rue de la Baume, Paris 8e, France, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention concerns a structure for the sliding of articles such as baggage or merchandise, or persons who have to be moved from one place to another, comprising at least one belt of elastomeric material on which there is fixed to the face used for sliding a surface covering of a thermoplastic polymer having a very low coefficient of friction.

Such structures are used more particularly in road transport or railway stations, airports, large stores or factories for the handling of passenger baggage and packages, clients' parcels or items which have to be moved around. They are also used in rooms or wagons containing baggage or merchandise in aircraft, trains, ships etc., to facilitate the loading and unloading of these. The German utility model No. 1,919,976 has already proposed a conveyor belt made of rubber, plastics material or the like, which is provided with a covering of polytetrafluoroethylene to which a glass fibre or asbestos fabric is connected by vulcanisation, the said fabric itself being connected by vulcanisation to the basic material of the belt. A structure of this kind could be used as a fixed sliding structure but would be very expensive owing to the quantity of polyolefin to be used. Furthermore it is fairly complicated to manufacture since it requires two successive vulcanisation operations on one fabric.

The present invention has as its object to remedy the aforesaid disadvantage and to provide a structure for sliding purposes which is inexpensive and is easy to manufacture, which is detachable and can be arranged over large surfaces. The structure for sliding purposes according to the invention is characterised in that it comprises a plurality of bands which are parallel in the direction of sliding, fixed by

[Price 25p]

their faces opposite to those covered with the thermoplastic polymer having a very low coefficient of friction to a continuous support.

It also comprises preferably at least one of the following features:

- the continuous support is made of a reinforced elastomer,
- the surface covering is made of polytetrafluoroethylene,
- the bands are fixed to the continuous support by vulcanisation,
- the support comprises ribs the length and spacing of which are equal to those of the bands, and the latter are fixed to the ribs.

It has also been discovered according to the invention that the structures for sliding purposes defined hereinbefore could advantageously be used in inflatable devices for rapid evacuation of transport vehicles, more particularly aircraft. It is known in fact that such vehicles have to be provided, for safety reasons, with devices in the manner of tubes or chutes for the rapid evacuation of the occupants of the vehicle concerned to the ground in the event of a disaster on board the vehicle. These chutes at present have a surface made of rubberised cloth and their use involves the risk of causing burns or injuries owing to the high coefficient of friction of the cloth. This risk is increased with aircraft of very large size, where the safety exits are situated at a considerable height above the ground. The use of inflatable evacuation devices with a surface consisting of a thermoplastic polymer having a very low coefficient of friction, more particularly polytetrafluoroethylene, makes it possible to obviate this disadvantage and to increase further the speed with which passengers can be evacuated. Of course, devices of this kind can also be used in ships, two-decker buses or coaches, etc.

Polytetrafluoroethylene is available commercially under trade marks such as "Teflon", "Fluon", "Algoflon", etc.

As other thermoplastic polymers having a very low coefficient of friction which can be

used, although slightly inferior to polytetrafluoroethylene, there may be mentioned the polyamides, more particularly those sold under the trade marks "Nylon", "Perlon" or "Risolan", the polyesters, more particularly those sold under the trade marks "Tergal" or "Mylar", and the polyhalogenoolefins other than polytetrafluoroethylene, wherein at least some of the halogen atoms are fluorine atoms, and preferably polymonochloro-trifluoro ethylene, more particularly that sold under the trade mark "Kel-F".

A slideway according to the invention will be described hereinafter by way of example and with reference to the Figures shown in the accompanying drawings.

Figure 1 shows in perspective a band cut from a sheet of material sold by the Applicant company under the mark "Joinfralon", constituted by reinforced rubber to which a covering of polytetrafluoroethylene has been adhesively secured.

Figure 2 shows in perspective a portion of a slideway of this kind constructed with the use of bands.

Figure 3 shows in section a portion of the said slideway, constructed by means of bands.

Figure 4 shows a variant wherein the support made of reinforced rubber comprises ribs on which are fixed the bands with an adhesively secured covering.

In Figure 1, the band 2 comprises the surface covering 5 of polytetrafluoroethylene which is fixed to the elastomeric material 8 reinforced by the fabric 4.

Figure 2 shows the support 1 made of rubber reinforced with a fabric, on which there are fixed parallel bands 2 of several centimetres in width, for example, and on these there is fixed to the upper, visible face, a surface covering of polytetrafluoroethylene having a thickness of several tenths of a millimetre. These bands may also be variable in spacing and width. The material of the support appears in the gaps 3 separating the bands 2, the width of the said gaps being greater than the width of the said bands. For greater clarity in the drawings, the height of the bands above the support has been exaggerated.

Figure 3 shows the reinforcing fabric 4 of a band 2, the thin covering 5 of polytetrafluoroethylene fixed to the band, and the reinforcing fabric 6 of the support 3.

Figure 4 shows a support 3 with ribs 7 on which the bands 2 are mounted.

Although the structure for sliding purposes described by way of example is the most advantageous, certain modifications may be made thereto. More particularly the fixing of the bands to the support and the polytetrafluoro-

ethylene coverings to the band may be effected by any known method. The support may have a sealing-tight or apertured surface in the gaps between the bands. The bands may be wider or closer together in some zones of the sliding structure. More particularly in the case of material handling tracks having a radius of curvature, or descent chutes, the bottom of the lateral walls liable to be struck by baggage or packages may be provided with a sliding strip wider than those of the central zone.

WHAT WE CLAIM IS:—

1. Structure for the sliding of articles such as baggage or merchandise or persons who have to be moved from one place to another, comprising at least one band made of elastomeric material on which there is fixed, to the face used for sliding, a surface covering of a thermoplastic polymer having a very low coefficient of friction, characterised in that it comprises a plurality of bands which are arranged in parallel manner in the direction of sliding, these bands being fixed at their faces opposite from those covered with the thermoplastic polymer having a very low coefficient of friction to a continuous support.
2. Structure for sliding purposes according to claim 1, characterised in that the continuous support is made of a reinforced elastomer.
3. Structure for sliding purposes according to claim 1 or 2, characterised in that the surface covering is made of polytetrafluoroethylene.
4. Structure for sliding purposes according to one of claims 1 to 3, characterised in that the bands are fixed to the continuous support by vulcanisation.
5. Structure for sliding purposes according to one of claims 1 to 4, characterised in that the support comprises ribs the width and spacing of which are equal to those of the bands, and in that the said bands are fixed to the said ribs.
6. Application of the structures for sliding purposes according to one of claims 1 to 5 to inflatable devices for the rapid evacuation of transport vehicles, more particularly aircraft.
7. Structure for sliding purposes substantially as hereinbefore described with reference to Figures 1 to 3 or Figure 4 of the accompanying drawing.

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COMPLETE SPECIFICATION

1 SHEET

*This drawing is a reproduction of
the Original on a reduced scale*

FIG.1

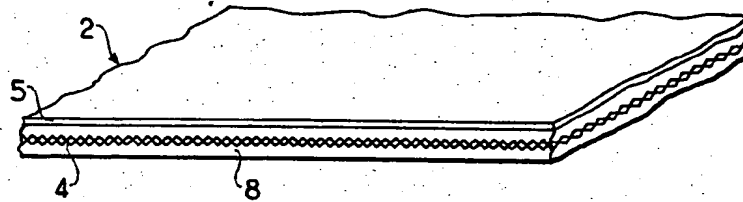


FIG. 2

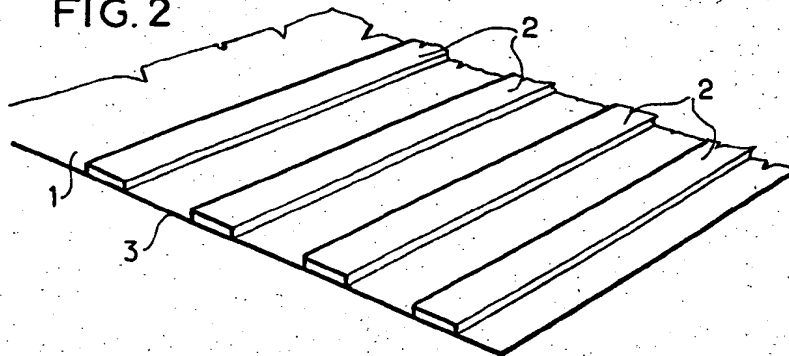


FIG. 3

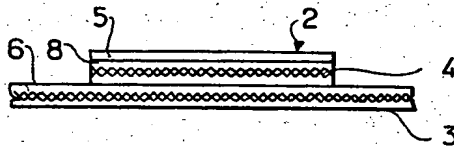


FIG. 4

